

study of Fungi. The fame waiting to reward the careful examination and study of the Fungi of the Mississippi Valley will be found sufficient to gratify the ambition of the most aspiring botanist.

The State of New York, perhaps, has been more thoroughly studied thus far in reference to its Fungal Flora than any other State of the Union. The State Botanist, Prof. Charles H. Peck, has now for several years devoted himself with unwearied industry to the identification of species with European forms and to the naming and describing of native species.

To illustrate what we may state in reference to Fungi in general let us take as an example the genus *Agaricus*. And I may here remark in passing that of this noble genus Prof. Peck has himself named and described nearly 150 species. More than half the species of this genus thus far found in North America are European and may be determined by the use of Cooke's Hand Book of British Fungi, or better still by Fries' *Hymenomyces Europæi*. A large part of the remainder will be found in Prof. Peck's reports in the published volumes of the New York State Museum of Natural History. A few other species and all new species should be submitted to Prof. Peck or some other Fungologist for description.

The study of North American Fungi has as yet been chiefly confined to the Eastern United States; the Fungi of the Mississippi Valley have received but little attention. To illustrate what yet remains to be done for the Fungal Flora of North America let us refer again to the genus *Agaricus*. Elias Fries in his *Hymenomyces Europæi*, Edition 2, 1874, enumerates 1,202 species. Scarcely 400 species of *Agaricus* have as yet been determined in this country. Who can say that the number of our species is greatly inferior to that of Europe? May it not be safe to say that *half the species, many genera, and some orders of North American Fungi are not yet studied?*

Mr. Charles C. Frost enumerates in the Amherst Catalogue upwards of 1,200 species of Fungi, all found in the single locality about Brattleboro, Vt. 155 species belong to the highest genus *Agaricus*, and nearly 600 to the highest family, the HYMENOMYCETES. It is not likely that every locality is so rich in species of Fungi as this one; but it is very probable that their number always exceeds that of the Flowering Plants.

The student will not find the genera and species of the higher Fungi, the AGARICINI and POLYPOREI, for example, any more difficult to make out than those of many orders of Flowering Plants. Prof. Peck's Twenty-third Report contains a Manual of the most common species of the higher Fungi, which forms a good introduction to the study of North American Fungi. Valuable directions in reference to the collection and preservation of specimens will be found in several of these Reports and especially in the Twenty-seventh.—A. P. MORGAN, *Dayton, Ohio*.

BOTANY IN JAPAN.—In a private letter from Dr. D. B. McCartee of the Imperial University of Japan, the following is of general interest:—[Ed.]

"The Japanese have paid a great deal of attention to Botany, and have published many books, some of them quite expensive ones, on the subject. They arrange the genera after the Linnean System, although some of them give the 'Natural Orders,' substituting Japanese names for the English or Latin ones. The illustrations are quite well drawn and the minute parts are frequently drawn magnified, so that with the habitat and description accompanying, the identification is generally comparatively easy. The Japanese also have colleges of Agriculture, and publish a Monthly Magazine on agricultural subjects, and the Department of Education is now issuing a work in parts on the economical products of the different provinces of Japan, with well executed illustrations.

SOME NOTES ON VARIATIONS IN PLANTS IN IOWA (observed for the most part in July and August, 1873).—A white *Vernonia*, found near Chariton, apparently a var. of *Vernonia fusciculata*, Michx., specimens fine and abundant.

Another variety of the same species, probably, is quite abundant in Monroe county. It is quite smooth, leaves linear-lanceolate, and very thickly punctate. This variety is so common that it should receive some notice in our botanical text books.

Rudbeckia triloba, L. presented some remarkable variations. Near Moulton in the southern part of the State, in a thicket growing along with the ordinary forms, I found some with ray florets a rich, velvety purple; some with purple and yellow rays, very much like those of *Coreopsis tinctoria*.

Verbena hastata, L. runs into numerous varieties. I found scores of pure white flowered specimens, growing by the roadside, along with the blue flowered kind, scattered along for more than a mile, between Moulton and Unionville. Around Albia I found it of various shades of color, pink, purple, pink and purple, pink and white, as well as white. I had seen a rose-colored variety previously in Michigan. And here I will refer to a variety of *Rudbeckia speciosa* quite common in some localities around Grand Rapids. It was very smooth, both stem and leaves, except the margin of the leaves were often rough. Otherwise there was no difference between this and the ordinary form.

A very strongly cork-winged oak attracted my attention not a little; but as I could find no description bearing on this feature, I could come to no conclusion concerning it. It was a small tree, with leaves much like those of *Q. nigra*, but this and another small oak that I did not have time to give much attention to, often had stellate pubescent leaves. The common Witch Hazel presented a like feature, though that occurs with stellate pubescent leaves in the East as well as at the West. In fact the stellar pubescent leaves are oftener found than any other form, as far as my observations extend; and I have often inquired why this feature was not noticed by writers.

Found quite a number of specimens of *Asclepias*, near Albia, agreeing substantially with the description of *A. amplexicaulis*, Mx., but that is said not to grow so far north. Now I will refer to some forms and variations noticed in various places.

A *Vicia Caroliniana* found quite abundant in one locality in Mississippi near Pontotoc, with white flowers.

A strictly erect *Clitoria*, with flowers in pairs and leaves smooth and glaucous, near same place.

A white variety of *Phlox reptans* found near Grand Rapids.

June 21, 1873. Found a singular *Allium*. Spathe 3 leaved, thin and pointed; flowers few, purplish, mixed with bulblets, stamens broad at base, anthers two lobed, somewhat sagittate; leaves two to three, thin, nearly radical, shorter than stem, which was 15 inches high; bulb $\frac{1}{2}$ by 1 inch, coated with a strong net work of whitish fibres, growing in moist soil. Not far from this I found a branching *Asclepias Coccuti*.

August 4, 1873. Saw several clusters of blossoms on a common locust tree in Iowa, and last summer July 31, saw the same feature in Connecticut. Aug. 20, 1873. Saw a cherry tree well covered with its second crop of fruit, which was nearly half grown.

I have in my possession a blossom of the common Snowball, picked Oct. 30, 1873, in a yard in Grand Rapids, Mich., and the same shrub, I think, had blossoms on it Sept. 18, the same year.

Bidens connata and *B. frondosa* are frequently met with around Grand Rapids, with rays 5 to 8. Sometimes the rays are quite conspicuous.

The past summer I found an abundance of *Dactyloctenium Egyptianum*, Willd., in several localities in Windsor and some in Hartford, but plants much smaller than specimens of the same grass found in Philadelphia.

Sept. 24, '76. Found *Lycopis Virginicus* with runners six feet long, and *Hydrocotyle Americana*, with runners three feet long. Saw also, *Spiraea salicifolia* in bloom for second time this season.

Linaria vulgaris in bloom October 14.

Nov. 4. Found *Houstonia carulea* in bloom. *Potentilla Candensis* and *Solidago latifolia* also in bloom.

Nov. 12. *Ranunculus arvensis* in bloom, and *Aster sagittifolius*.

Nov. 17. *Aster oblongifolius* still in bloom. This seemed remarkable as it had been quite cold, and the mercury down to 20°.

Sida spinosa, L. is found here. Is it common for that to grow wild so far to the North?
N. COLEMAN.

IOWA PLANTS.—THE BOTANICAL GAZETTE for January has an article on recently discovered plants of Iowa, about which I wish to say a few words. There must have been some oversight in the matter or several of them would have been added to the State catalogue some time since. The *Trifolium reflexum* was found by myself in 1868, in Troy township, Monroe county. I found *Tridescandia rosea* and *T. Virginica*, as also *T. pilosa* in 1867, all three of which I transplanted into my garden, where they grew finely. *Orybaphus angustifolius* was found the same year, and some specimens presented the remarkable feature of having the branches opposite. I do not now remember whether *Rosa lucida* was first seen in 1868 or 1869, or *Oenothera pumila*, but I found them both. I spent my summer vacation of 1873 in Iowa, and while there sent nearly three hundred names of species and varieties, not then catalogued, to the State Botanist, many of them seen for the first time in Iowa, that summer. I have not the list of names at hand, but think I sent those of *Sonchus oleraceus* and *Lespedeza violacea*. Among those seen for the first time in Iowa in 1873 were *Cassia Marilandica* and *Solanum Carolinense* and *S. Virginianum*.
N. COLEMAN.

THE SHIPPING OF LIVING PLANTS.—It is probably known to many that on the 20th of October last I sent to the Botanic Garden, at Sidney, New South Wales, by request of the Australian Commission at the Centennial Exposition, a suite of New Jersey aquatic plants, in which were *Nelumbium latatum*, *Nymphaea odorata*, *Nymphaea advena*, *Sarcocolla purpurea*, *Pontederia cordata*, and *Vaccinium macrocarpon*. Where possible, the roots and seeds both were sent. They were packed in wet sphagnum, and sent in a tight wine cask. To make matters sure, the lot was sent overland to San Francisco. The venture has been heard from. The seeds all arrived right, and some of them had sprouted. The rhizomes of the *Nymphaea* suffered most, having badly softened on the way; so that it is quite doubtful whether these can be made to live. I hope to try another venture this year, adopting a different method in the packing. As the shipping of living plants to a great distance is of practical importance, the method and result shall be given to the BOTANICAL GAZETTE.—S. LOCKWOOD, *Freehold, N. J.* March 24.

We are pleased to acknowledge the receipt of eight botanical pamphlets from M. Alph. DeCandolle. They are "Monstruosites Vegetales," 1841, with seven plates, "Lois de la Nomenclature Botanique," 1867, A Reply to Various Questions and Criticisms made upon the former, 1869, "Experiences sur des Graines de Diverses Especies plongees dans de l'eau de mer," by M. Gustave Thuret, 1873, "Existe-t-il dans la vegetation actuelle des Caracteres Generaux et Distinctifs que permettraient de la reconnaître en tous pays si elle devenait fossile?," 1875, "L'Age d'un Arbre a-t-il une influence sur l'epoque moyenne de sa feuillaison?," 1876, "Sur la designation de la direction des spires dans les plantes," 1876, "Observations sur l'Enroulement des Vrilles, by M. Casimir De Candolle, January 1877. The last pamphlet is the only one that requires special mention at this date. We have now before us the works of three generations of De Candolles, giving us a notable example of inherited tastes. In this article on the coiling of tendrils, M. C. De Candolle says that his researches were suggested by Darwin's work on the "Movements and Habits of Climbing Plants." The experiments are conducted for the most part with the tendrils of the Bryony, which do not roll themselves in one direction, but from a set of helices alternately right and left-handed. It